

AMENDMENTS

In the Claims

Claims 1-14 (cancelled)

Claim 15 (currently amended): A modified functional epothilone PKS wherein said modification comprises at least one of:

replacement of at least one acyltransferase (AT) ~~AT~~ domain with an AT domain of different specificity in module 7 and/or module 8;

inactivation of a ketoreductase (KR) ~~at least one activity in at least one β -carbonyl modification domain~~ domain in module 7;

inactivation of a methyltransferase (MT) domain in module 8; and

addition of at least one of KR, dehydrogenase (DH) and enoylreductase (ER) ~~DH and ER~~ activity in at least one β -carbonyl modification domain in module 7 and/or module 8;

wherein the modified PKS is contained in a non-*S. cellulosum* cell or contained in a cell-free system, and wherein the modified PKS produces an epothilone D derivative.

Claim 16 (currently amended): The modified PKS of claim 15 ~~contained in a cell or contained in a cell-free system~~, wherein said cell or system contains additional enzymes for modification of said epothilone D derivative ~~the product of said epothilone PKS~~.

Claim 17 (previously presented): The modified PKS of claim 16 wherein said additional enzymes comprise an oxidase.

Claims 18-24 (cancelled)

Claim 25 (currently amended): A PKS enzyme comprising all of a non-epothilone PKS and a methyltransferase (MT) ~~an MT domain of module 8~~ of the epothilone PKS.

Claims 26-28 (cancelled)

Claim 29 (currently amended): A modified functional epothilone PKS contained in a non-*S. cellulorum* host cell, said PKS comprising (a) the proteins encoded by the *Sorangium cellulorum epoA, epoB, epoC, epoD, and epoF* genes and (b) a modified functional EpoE protein that lacks at least one activity encoded by a *Sorangium cellulorum epoE* gene and/or comprises at least one domain derived from a heterologous polyketide synthase (PKS), wherein the PKS produces an epothilone D derivative when expressed in the cell.

Claim 30 (currently amended): The modified functional ~~EpoE protein~~ epothilone PKS of claim 29 wherein the specificity of the acetyl module 7 comprises an acyl transferase (AT) domain having in module 7 is malonyl, ethylmalonyl, or 2-hydroxymalonyl, and/or the specificity of the AT domain in module 8 is malonyl, ethylmalonyl, or 2-hydroxymalonyl specificity and/or module 8 comprises an AT having malonyl, ethylmalonyl, or 2-hydroxymalonyl specificity.

Claim 31 (currently amended): The modified functional ~~EpoE protein~~ epothilone PKS of claim 29 that lacks the a methyl transferase (MT) activity of module 8.

Claim 32 (currently amended): The modified functional ~~EpoE protein~~ epothilone PKS of claim 29 contained in a cell or contained in a cell-free system.

Claim 33 (currently amended): The modified functional EpoE protein of claim 32 15, wherein said cell or cell-free system comprises a functional PKS.

Claim 34 (currently amended): The modified functional EpoE protein of claim 33 15, wherein the functional PKS comprises proteins encoded by EpoA, EpoB, EpoC, EpoD and EpoF genes ~~proteins or derivatives thereof.~~